SIEMENS

Data sheet



SIPLUS S7-1500 CPU 1518-4 PN/DP with conformal coating based on 6ES7518-4AP00-0AB0 . central processing unit with work memory 4 MB for program and 20 MB for data, 1st interface, PROFINET IRT with 2-port switch, 2nd interface, Ethernet, 3rd interface, Ethernet, 4th interface, PROFIBUS, 1 ns bit-performance, SIMATIC memory card required

| General information | |
|--------------------------------------------------------|-------------------------|
| Product type designation | CPU 1518-4 PN/DP |
| HW functional status | FS01 |
| Firmware version | V1.5 |
| Product function | |
| Isochronous mode | Yes |
| Engineering with | |
| STEP 7 TIA Portal configurable/integrated from version | see entry ID: 109746275 |
| Display | |
| Screen diagonal [cm] | 6.1 cm |
| Control elements | |
| Number of keys | 6 |
| Mode selector switch | 1 |
| Supply voltage | |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 19.2 V |
| permissible range, upper limit (DC) | 28.8 V |
| Reverse polarity protection | Yes |
| Input current | |
| Current consumption (rated value) | 1.55 A |
| Inrush current, max. | 2.4 A; Rated value |
| l²t | 0.45 A ² ·s |
| Power | |
| Infeed power to the backplane bus | 12 W |
| Power consumption from the backplane bus (balanced) | 30 W |
| Power loss | |
| Power loss, typ. | 24 W |
| Memory | |
| SIMATIC memory card required | Yes |
| Work memory | |
| integrated (for program) | 4 Mbyte |
| integrated (for data) | 20 Mbyte |
| Load memory | |
| Plug-in (SIMATIC Memory Card), max. | 32 Gbyte |
| Backup | |
| maintenance-free | Yes |
| CPU processing times | |

| for bit operations, typ. | 1 ns |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| for word operations, typ. | 2 ns |
| for fixed point arithmetic, typ. | 2 ns |
| for floating point arithmetic, typ. | 6 ns |
| CPU-blocks | |
| Number of blocks (total) | 10 000 |
| DB | |
| Number, max. | 10 000; Number range: 1 to 65535 |
| Size, max. | 10 Mbyte |
| FB | |
| Number, max. | 9 998; Number range: 1 to 65535 |
| • Size, max. | 512 kbyte |
| FC | , |
| Number, max. | 9 999; Number range: 1 to 65535 |
| • Size, max. | 512 kbyte |
| OB | |
| • Size, max. | 512 kbyte |
| Number of free cycle OBs | 100 |
| Number of time alarm OBs | 20 |
| Number of time alarm OBs Number of delay alarm OBs | 20 |
| | |
| Number of cyclic interrupt OBs | 20 |
| Number of process alarm OBs | 50 |
| Number of DPV1 alarm OBs | 3 |
| Number of isochronous mode OBs | 2 |
| Number of technology synchronous alarm OBs | 2 |
| Number of startup OBs | 100 |
| Number of asynchronous error OBs | 4 |
| Number of synchronous error OBs | 2 |
| Number of diagnostic alarm OBs | 1 |
| Nesting depth | |
| per priority class | 24 |
| Counters, timers and their retentivity | |
| S7 counter | |
| | 2 048 |
| Number | 2010 |
| Number Retentivity | 20.0 |
| | Yes |
| Retentivity | |
| Retentivity — adjustable | Yes |
| Retentivity — adjustable IEC counter • Number | |
| Retentivity — adjustable IEC counter • Number Retentivity | Yes |
| Retentivity — adjustable IEC counter • Number | Yes Any (only limited by the main memory) |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable | Yes Any (only limited by the main memory) |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number | Yes Any (only limited by the main memory) Yes |
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| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable | Yes Any (only limited by the main memory) Yes |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer | Yes Any (only limited by the main memory) Yes 2 048 Yes |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number | Yes Any (only limited by the main memory) Yes 2 048 |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity | Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable | Yes Any (only limited by the main memory) Yes 2 048 Yes |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable Data areas and their retentivity | Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable | Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 768 kbyte; Available retentive memory for bit memories, timers, |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. | Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. | Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 768 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. | Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 768 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB |
| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Number of clock memories | Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 768 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB |
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| Retentivity — adjustable IEC counter • Number Retentivity — adjustable S7 times • Number Retentivity — adjustable IEC timer • Number Retentivity — adjustable Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag • Size, max. • Number of clock memories Data blocks • Retentivity adjustable • Retentivity preset Local data | Yes Any (only limited by the main memory) Yes 2 048 Yes Any (only limited by the main memory) Yes 768 kbyte; Available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB 16 kbyte 8; 8 clock memory bit, grouped into one clock memory byte Yes No |
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| Number of Instituted By Statement | Number of IO modules | 8 192 |
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| integrated DP Interface 108 byte, 16 KB via the integrated PROFINET IO Interface, 8 KB via the integrated DP Interface per CM/CP Inputs (volume) 8 kbyte Unital (volume) 8 kbyte Subprocess images Via CM Subprocess images, max. 8 Number of subprocess images, max. 8 Number of subprocess images, max. 9 Number of Io Subprocess images, max. 10 Number of Io Subprocess images, max. 10 Number of Io Controllers - Integrated 1 | | 46 kbyto: 46 KB via the interreted BBOEINET 10 interference AKB in the |
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| — Inputs (volume) | per CM/CP | |
| Outputs (volume) Subprocess images Number of subprocess images, max. Number of DP masters Integrated switch Integrated switch Integrated switch Integrated switch Integrated switch Integrated switch Integrated Integrated switch Integrated switch Integrated Inte | · | 8 kbyte |
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| Hardware configuration Number of distributed ID systems Integrated Integrat | | 32 |
| Number of distributed IO systems Number of DP masters integrated | | 02 |
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| • Via CM Number of IO Controllers • Integrated • Via CM • Modules per rack, max. • Number of lines, max. • Number of Ines, max. • Number of PIP CMs • Number of PIP CMs • Backup time • Deviation per day, max. Operating hours counter • Number • Number • Number • Number • Resident of the providence | | 1 |
| be inserted in total Number of IO Controllers • integrated • Via CM **Nodules per rack, max. • Modules per rack, max. • Number of lines, max. • Number of lines, max. • Number of PIP CMs • Number of PIP CMs • Number of PIP CMs • Number of lines, max. • Time of day Clock • Type • Backup time • Deviation per day, max. Operating hours counter • Number | | |
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| integrated ivia CM | Number of IO Controllers | DE HISCHEU III WAI |
| e-Via CM 8: A maximum of 8 CMs/CPs (PROFIBUS, PROFINET, Ethernet) can be inserted in total Rack * Modules per rack, max. * Number of lines, max. * Number of lines, max. * Number of PtP CMs * Number of PtP CMs * Time of day Clock * Type * Backup time * Deviation per day, max. * Operating hours counter * Number * Number * Supported * (a Neg. May 19 | | 1 |
| Be inserted in total Rack Modules per rack, max. Number of lines, max. Number of lines, max. 1 PtP CM Number of PtP CMs the number of connectable PtP CMs is only limited by the number of available slots Time of day Clock Type Backup time Beakup time Peviation per day, max. Number Number Number Number Number Number Number Number Number Policy State of the | _ | |
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| available slots Time of day Clock Type Backup time Deviation per day, max. Operating hours counter Number Number Number Supported Tin AS, master In AS, slave On Ethernet via NTP Yes Interfaces Number of PROFIBUS interfaces R J 45 (Ethernet) Interface types PROFINET IO Controller PROFINET IO Device PROFINET IO Device PROFINET IO Controller Services PROFINET IO Controller Wes PROFINET IO Controller Ves Ves PROFINET IO Controller Services | | the number of connectable DtD CMs is only limited by the number of |
| Clock | • Nulliper of FtF Civis | |
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| • Type • Backup time • Deviation per day, max. Operating hours counter • Number • Number • Supported • in AS, master • in AS, slave • in AS, slave • on Ethernet via NTP Number of PROFINET interfaces 1. Interface Interface types • Ry 45 (Ethernet) • Number of pROFINET in Controller • Number of PROFINET IO Controller • Number of PROFINET IO Device • SIMATIC communication • Yes • One the communication • Yes • Open IE communication • Yes • Similation • Yes • Open IE communication • Yes • Media redundancy • PROFINET IO Controller • Yes • Media redundancy • Yes • Media redundancy • Yes • Media redundancy • Yes • PROFINET IO Controller | | |
| Backup time Deviation per day, max. Operating hours counter Number Number Number Number Supported Supported Number Number of PROFINET interfaces Number of PROFIBUS interfaces Number of PROFIBUS interfaces Number of prots Number of ports | | Hardware clock |
| Deviation per day, max. Operating hours counter Number Supported Supported Ves to DP, master in AS, master in AS, slave on Ethernet via NTP Ves Interfaces Number of PROFINET interfaces Interface types Ry 45 (Ethernet) Number of ports Number of ports Ry 45 (Ethernet) Number of Device integrated switch PROFINET IO Controller PROFINET IO Device SIMATIC communication Ves PROFINET IO Controller Ves PROFINET IO Controller Ves SIMATIC communication Yes PROFINET IO Controller Web server Media redundancy PROFINET IO Controller Yes PROFINET IO Controller PROFINET IO Controller PROFINET IO Controller Services | | |
| Operating hours counter ● Number 8 Clock synchronization Yes ● supported Yes ● to DP, master Yes ● in AS, master Yes ● in AS, slave Yes ● on Ethernet via NTP Yes Interfaces Number of PROFINET interfaces 3 Number of PROFIBUS interfaces 1 1. Interface 1 Interface types PRJ 45 (Ethernet) Yes ● Number of ports 2 ● integrated switch Yes Protocols Yes ● PROFINET IO Controller Yes ● PROFINET IO Controller Yes ● SIMATIC communication Yes ● Open IE communication Yes ● Web server Yes ● Media redundancy Yes PROFINET IO Controller Yes PROFINET IO Controller Yes | | |
| ● Number 8 Clock synchronization ● supported Yes ● to DP, master Yes ● in AS, master Yes ● on Ethernet via NTP Yes Interfaces Number of PROFINET interfaces 3 Number of PROFIBUS interfaces 1 1. Interface Interface types ● RJ 45 (Ethernet) Yes ● Number of ports 2 ● Number of ports 2 ● Integrated switch Yes PROFINET IO Controller Yes ● PROFINET IO Device Yes ● SIMATIC communication Yes ● Open IE communication Yes ● Web server Yes ● Media redundancy Yes PROFINET IO Controller Yes PROFINET IO Controller Yes Services Services | | 10 5, 1 γρ 2 5 |
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| in AS, slave on Ethernet via NTP Yes Interfaces Number of PROFINET interfaces 3 Number of PROFIBUS interfaces 1 1. Interface Interface types RJ 45 (Ethernet) Number of ports Integrated switch Yes integrated switch Yes Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Yes Open IE communication Web server Media redundancy PROFINET IO Controller Yes Media redundancy PROFINET IO Controller Yes Media redundancy Yes PROFINET IO Controller Yes Media redundancy Yes PROFINET IO Controller Services Services Yes PROFINET IO Controller Yes Yes PROFINET IO Controller Yes<td></td><td></td> | | |
| ● on Ethernet via NTP Interfaces Number of PROFINET interfaces 3 Number of PROFIBUS interfaces 1 Interface Interface types ● RJ 45 (Ethernet) Yes ● Number of ports 2 ● integrated switch Yes PROFINET IO Controller Yes ● SIMATIC communication Yes ● Web server Yes ● Media redundancy Yes PROFINET IO Controller Services | | |
| Number of PROFINET interfaces Number of PROFIBUS interfaces 1 1. Interface Interface types • RJ 45 (Ethernet) • Number of ports • Number of ports • integrated switch PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Web server • Web server • Media redundancy PROFINET IO Controller • Yes • Media redundancy PROFINET IO Controller • Yes • Media redundancy PROFINET IO Controller Yes • Media redundancy PROFINET IO Controller Yes • Media redundancy | | |
| Number of PROFINET interfaces Number of PROFIBUS interfaces 1. Interface Interface types RJ 45 (Ethernet) Number of ports | on Ethernet via NTP | Yes |
| Number of PROFIBUS interfaces 1. Interface Interface types • RJ 45 (Ethernet) Yes • Number of ports 2 • integrated switch Yes Protocols • PROFINET IO Controller Yes • SIMATIC communication Yes • Open IE communication Yes • Web server Yes • Media redundancy Yes PROFINET IO Controller Services | Interfaces | |
| Interface types • RJ 45 (Ethernet) Yes • Number of ports 2 • integrated switch Yes Protocols • PROFINET IO Controller Yes • SIMATIC communication Yes • Web server Yes • Media redundancy Yes PROFINET IO Controller Services | Number of PROFINET interfaces | 3 |
| Interface types RJ 45 (Ethernet) Number of ports Integrated switch Yes Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Yes Yes Yes Yes Yes Yes Services | Number of PROFIBUS interfaces | 1 |
| Interface types RJ 45 (Ethernet) Number of ports Integrated switch Yes Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Yes Yes Yes Yes Yes Yes Services | 1. Interface | |
| RJ 45 (Ethernet) Number of ports integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Yes Services | | |
| Number of ports integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller PROFINET IO Controller Services | * ' | Yes |
| integrated switch Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Services | | |
| Protocols PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Services | | |
| PROFINET IO Controller PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Services Yes Yes Yes Yes Yes | | 100 |
| PROFINET IO Device SIMATIC communication Open IE communication Web server Media redundancy PROFINET IO Controller Services Yes Yes Yes | | Yes |
| SIMATIC communication Open IE communication Wes Web server Media redundancy PROFINET IO Controller Services | | |
| Open IE communication Web server Media redundancy PROFINET IO Controller Services | | |
| Web server Media redundancy PROFINET IO Controller Services Yes Yes Yes | | |
| ● Media redundancy PROFINET IO Controller Services | • | |
| PROFINET IO Controller Services | | |
| Services | | Yes |
| | | |
| — PG/OP communication Yes | | |
| | — PG/OP communication | Yes |

| — Isochronous mode | Yes |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | |
| — IRT | Yes |
| — PROFlenergy | Yes |
| — Prioritized startup | Yes; Max. 32 PROFINET devices |
| Number of connectable IO Devices, max. | 512; In total, up to 1 000 distributed I/O devices can be connected via PROFIBUS or PROFINET |
| Of which IO devices with IRT, max. | 64 |
| Number of connectable IO Devices for RT, max. | 256 |
| — of which in line, max. | 256 |
| Number of IO Devices that can be simultaneously activated/deactivated, max. | 8 |
| Number of IO Devices per tool, max. | 8 |
| — Updating times | The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data |
| Update time for IRT | |
| — for send cycle of 250 μs | 250 µs to 4 ms |
| — for send cycle of 500 μs | 500 μs to 8 ms |
| — for send cycle of 1 ms | 1 ms to 16 ms |
| — for send cycle of 2 ms | 2 ms to 32 ms |
| — for send cycle of 4 ms | 4 ms to 64 ms |
| With IRT and parameterization of "odd" send | Update time = set "odd" send clock (any multiple of 125 µs: 375 µs, 625 |
| cycles | µs 3 875 µs) |
| Update time for RT | |
| — for send cycle of 250 μs | 250 μs to 128 ms |
| — for send cycle of 500 µs | 500 μs to 256 ms |
| — for send cycle of 1 ms | 1 ms to 512 ms |
| — for send cycle of 2 ms | 2 ms to 512 ms |
| — for send cycle of 4 ms | 4 ms to 512 ms |
| PROFINET IO Device | 4 110 to 012 110 |
| Services | |
| — PG/OP communication | Yes |
| — Isochronous mode | No |
| — IRT | Yes |
| | Yes |
| PROFlenergy Shared device | |
| | Yes |
| Number of IO Controllers with shared device, max. | 4 |
| 2. Interface | |
| Interface types | |
| RJ 45 (Ethernet) | Yes |
| Number of ports | 1 |
| • integrated switch | No |
| Protocols | |
| PROFINET IO Controller | No |
| PROFINET IO Device | No |
| SIMATIC communication | Yes |
| Open IE communication | Yes |
| Web server | Yes |
| 3. Interface | |
| | |
| Interface types | Voc |
| RJ 45 (Ethernet) Number of parts | Yes |
| Number of ports | 1 |
| • integrated switch | No |
| Protocols | |
| PROFINET IO Controller | No |
| PROFINET IO Device | No |
| SIMATIC communication | Yes |
| Open IE communication | Yes |
| Web server | Yes |
| | |

| DDOEIDIIS DD master | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROFIBUS DP master | 40) for the interreted DDOCIDUO DD interfer |
| Number of connections, max. | 48; for the integrated PROFIBUS DP interface |
| Number of DP slaves, max. | 125; In total, up to 1 000 distributed I/O devices can be connected via PROFIBUS or PROFINET |
| Services | |
| — PG/OP communication | Yes |
| — Equidistance | Yes |
| — Isochronous mode | Yes |
| Activation/deactivation of DP slaves | Yes |
| 4. Interface | |
| Interface types | |
| • RS 485 | Yes |
| Number of ports | 1 |
| Protocols | |
| PROFIBUS DP master | Yes |
| | |
| PROFIBUS DP slave | No |
| SIMATIC communication | Yes |
| PROFIBUS DP master | |
| Number of connections, max. | 48; for the integrated PROFIBUS DP interface |
| Services | |
| — PG/OP communication | Yes |
| Activation/deactivation of DP slaves | Yes |
| Interface types | |
| RJ 45 (Ethernet) | |
| • 100 Mbps | Yes |
| Autonegotiation | Yes |
| Autocrossing | Yes |
| Industrial Ethernet status LED | Yes |
| RS 485 | 100 |
| • Transmission rate, max. | 12 Mbit/s |
| | 12 IVIDIUS |
| Protocols | A1. |
| PROFIsafe | No |
| Number of connections | 004 |
| Number of connections, max. | 384; via integrated interfaces of the CPU and connected CPs / CMs |
| Number of connections reserved for ES/HMI/web | 10 |
| Number of connections via integrated interfaces | 192 |
| Number of S7 routing paths | 64: in total, only 16 S7 Pouting connections are supported via |
| - Hamber of Or Touting patilo | 64; in total, only 16 S7-Routing connections are supported via |
| | PROFIBUS |
| Redundancy mode | |
| Redundancy mode Media redundancy | PROFIBUS |
| Redundancy mode | PROFIBUS Yes; as MRP redundancy manager and/or MRP client; max. number of |
| Redundancy mode Media redundancy — MRP | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • \$7 routing • \$7 communication, as server • \$7 communication, as client • User data per job, max. | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes Yes See online help (S7 communication, user data size) |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes See online help (S7 communication, user data size) |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP — Data length, max. | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes Yes See online help (S7 communication, user data size) |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes See online help (S7 communication, user data size) |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP — Data length, max. — several passive connections per port, | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes See online help (S7 communication, user data size) Yes 64 kbyte |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes See online help (S7 communication, user data size) Yes 64 kbyte Yes Yes |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max. | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes See online help (S7 communication, user data size) Yes 64 kbyte Yes |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max. • UDP | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes See online help (S7 communication, user data size) Yes 64 kbyte Yes 64 kbyte Yes |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max. • UDP — Data length, max. | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes See online help (S7 communication, user data size) Yes 64 kbyte Yes Yes 1 472 byte |
| Redundancy mode Media redundancy — MRP — Switchover time on line break, typ. — Number of stations in the ring, max. SIMATIC communication • S7 routing • S7 communication, as server • S7 communication, as client • User data per job, max. Open IE communication • TCP/IP — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) — Data length, max. • UDP | Yes; as MRP redundancy manager and/or MRP client; max. number of devices in the ring: 50 200 ms 50 Yes Yes Yes See online help (S7 communication, user data size) Yes 64 kbyte Yes 64 kbyte Yes |

| • LLDP | Yes |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Web server | |
| • HTTP | Yes; Standard and user-defined pages |
| • HTTPS | Yes; Standard and user-defined pages |
| Further protocols | |
| • MODBUS | Yes; MODBUS TCP |
| Isochronous mode | |
| Equidistance | Yes |
| S7 message functions | |
| Number of login stations for message functions, max. | 32 |
| Program alarms | Yes |
| Number of configurable program messages, max. | 10 000 |
| Number of simultaneously active program alarms | 1 000 |
| Test commissioning functions | |
| Status block | Yes; Up to 16 simultaneously |
| Single step | No |
| Status/control | |
| Status/control variable | Yes |
| Variables | Inputs, outputs, memory bits, DB, times, counters |
| Number of variables, max. | |
| of which status variables, max. | 200; per job |
| — of which control variables, max. | 200; per job |
| Forcing | |
| Forcing, variables | Inputs, outputs |
| Number of variables, max. | 200 |
| Diagnostic buffer | V |
| • present | Yes |
| Number of entries, max. Studied requested proof | 3 200 |
| — of which powerfail-proof | 1 000 |
| Traces • Number of configurable Traces | 8 |
| | |
| Interrupts/diagnostics/status information | |
| Diagnostics indication LED • RUN/STOP LED | Yes |
| • ERROR LED | Yes |
| MAINT LED | Yes |
| Connection display LINK TX/RX | Yes |
| Supported technology objects | |
| Motion Control | Yes |
| Speed-controlled axis | |
| Number of speed-controlled axes, max. | 128; Up to 128 axes in total (speed-controlled, positioning axis, external |
| | encoders) are supported |
| Positioning axis | |
| Number of positioning axes, max. | 128; Up to 128 axes in total (speed-controlled, positioning axis, external |
| | encoders) are supported |
| External encoders | 400 H 4 400 |
| Number of external encoders, max. | 128; Up to 128 axes in total (speed-controlled, positioning axis, external encoders) are supported |
| Controller | οποσάστος από σαμφοτίσα |
| PID_Compact | Yes; Universal PID controller with integrated optimization |
| • PID_3Step | Yes; PID controller with integrated optimization for valves |
| Counting and measuring | |
| High-speed counter | Yes |
| Ambient conditions | |
| Ambient temperature during operation | |
| horizontal installation, min. | 0 °C; = Tmin (incl. condensation/frost) |
| horizontal installation, max. | 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the |
| | display is switched off |
| vertical installation, min. | 0 °C; = Tmin |
| vertical installation, max. | 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the |
| | |

| | display is switched off |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient temperature during storage/transportation | display is switched off |
| min. | -40 °C |
| • max. | 70 °C |
| Altitude during operation relating to sea level | |
| Installation altitude above sea level, max. | 5 000 m |
| Ambient air temperature-barometric pressure- altitude | Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) |
| Relative humidity | |
| With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) |
| Resistance | |
| Coolants and lubricants | |
| Resistant to commercially available coolants and lubricants | Yes; Incl. diesel and oil droplets in the air |
| Use in stationary industrial systems | |
| to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request |
| to chemically active substances according to EN 60721-3-3 to mechanically active substances according to | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, * |
| EN 60721-3-3 | |
| Use on ships/at sea | V 0 000 11 15 15 15 15 15 15 15 15 15 15 15 15 |
| to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request |
| to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * |
| Usage in industrial process technology | |
| Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) |
| Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) |
| Remark | |
| Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! |
| Conformal coating | |
| Coatings for printed circuit board assemblies acc. to EN 61086 | Yes; Class 2 for high reliability |
| Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection |
| Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life |
| Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A |
| configuration / header | |
| configuration / programming / header | |
| Programming language | |
| — LAD | Yes |
| — FBD | Yes |
| — STL | Yes |
| — SCL | Yes |
| — GRAPH | Yes |
| Know-how protection | V |
| User program protection/password protection | Yes |
| Copy protection Plack protection | Yes |
| Block protection Access protection | Yes |
| Access protection | Voc |
| Password for displayProtection level: Write protection | Yes Yes |
| Trotection level. White protection | 100 |

| Protection level: Read/write protection | Yes |
|-------------------------------------------------------------|-------------------------------|
| Protection level: Complete protection | Yes |
| programming / cycle time monitoring / header | |
| • lower limit | adjustable minimum cycle time |
| • upper limit | adjustable maximum cycle time |
| Dimensions | |
| Width | 175 mm |
| Height | 147 mm |
| Depth | 129 mm |
| Weights | |
| Weight, approx. | 1 988 g |

last modified: 11/3/2021 ☑